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detecting similarities between the pattern of spectral data associated with the chemical or physical property of the training set and a pattern of spectral data for the test compound to determine whether the test compound is predicted to share the chemical or physical property.

Remarks

1. *Status of the Application*

The Examiner has issued a Restriction Requirement dividing the claims as follows:

- I. Claims 1-24 and 55-58, drawn to a method of predicting a biological activity of a molecule, and a corresponding computer implemented system, classified in class 702, subclass 28.
- II. Claims 27-40 and 59-60, drawn to a method for predicting a biological, chemical or physical property of a molecule, classified in class 702, subclass 29.
- III. Claims 41 and 61, drawn to a method of using spectral data as structure descriptors, classified in class 702, subclass 28.
- IV. Claims 42-47, drawn to a method of establishing a relationship between spectral data and a biological activity of a molecule, classified in class 702, subclass 19.
- V. Claims 48-50 and 62-63, drawn to a method of establishing a spectral data activity relationship, classified in class 702, subclass 28.
- VI. Claims 51-54 and 64, drawn to a method for determining structural features of a plurality of compounds that contribute to determining a particular endpoint property exhibited by the compounds, classified in class 702, subclass 28.
- VII. Claims 25-26, drawn to a computer-readable medium, classified in class 550, subclass 170.

2. *The Inventions as grouped are not distinct.*

The Examiner alleges that "Groups I-VI can be shown to be distinct methods because each of the methods have different steps, different modes of operation, different effects, and/or different functions." The Examiner further alleges that "these inventions are distinct ... because they have acquired a separate status in the art because of their recognized divergent subject matter."

Applicants submit that all claims should be examined together because they are not distinct, rather they differ in form and scope. Page 21, lines 3-9 of the application states "the QSAR ... methods utilize spectral data as structure descriptors and correlate the spectral data

with specific biological, chemical, or physical endpoints without the need to assign spectral features to their corresponding structural elements. In recognition of the advantages presented by using spectral data as structure descriptors, a correlation provided by the methods described herein is termed a Spectral Data Activity Relationship (SDAR).” An endpoint is defined on page 17, lines 1-3, as “a particular biological, chemical, or physical property or a set of such properties for a compound that are either qualitatively or quantitatively measurable.”

All of the claims pending in the present application relate to the SDAR methods and should be examined together. The claims relate to specific aspects or applications of the generally disclosed SDAR methods and therefore differ only in scope and/or form (see the Examples on pages 21-51). Independent claim 1 (illustrative of Group I) is directed to using the method to predict, specifically, a biological property of a molecule. Independent claim 27 (illustrative of Group II) is directed to predicting any property, biological, chemical, or physical, of a molecule, utilizing specifically recited steps for making a correlation (SDAR) between spectral data and a molecular property. Independent claim 41 (illustrative of Group III) is directed to using spectral data as structure descriptors, which is part of the SDAR method. Independent claim 42 (illustrative of Group IV) is directed to a general SDAR method of establishing a correlation between spectral data and a biological, chemical, or physical property. Independent claim 48 (illustrative of Group V) is directed to a specific method of establishing an SDAR between endpoint data and spectral data. Independent claim 51 (illustrative of Group VI) is directed to establishing an SDAR and using it to determine the structural features of molecules that are responsible for their observed properties. Independent claims 25 and 26 (Group VII) are directed to computer readable media having stored thereon the computational instructions for establishing and using spectral data activity relationships (SDARs). As clearly stated in the application, on page 11, lines 4-5, “[t]he methods of the present invention are advantageously computer implemented.” A computer readable medium having instructions for making and using SDARs is an aspect of computer implementation and is not distinct therefrom. Thus, the claims as grouped into inventions I-VII are not distinct, they all relate to the SDAR methods.

3. *The Examiner has not established a prima facie case for restriction.*

Even if the claims, as grouped by the Examiner into separate inventions, are distinct, the Examiner has not met the burden of showing why restriction is proper. “Every requirement to restrict has two aspects: (1) the reasons (as distinguished from the mere statement of conclusion)

why the inventions as claimed are either independent or distinct, and (2) the reasons for insisting upon restriction therebetween." MPEP §808.

The Examiner has classified the claims of Groups I-VI into a single class, class 702. Furthermore, the Examiner classified Groups I, III and VI into subclass 28 and classified Groups II, IV and V into subclass 19. MPEP § 808.02 states that "where the related inventions as claimed are shown to be distinct ... the examiner, in order to establish reasons for insisting upon restriction, must show by appropriate explanation one of the following," separate classification, separate status in the art when they are classifiable together, or different field of search. MPEP § 808.02 further states that "where ... the classification is the same and the field of search is the same and there is no clear indication of separate future classification and field of search, no reasons exist for dividing among related inventions. The Examiner has not cited any evidence, nor provided an appropriate explanation why the claims as divided have separate classifications or have achieved separate status in the art. Rather, the Examiner has merely stated the conclusions. The Examiner also has not provided any evidence that different fields of search will be required for examination of the pending claims. Thus, the Examiner has not established that examination of all the pending claims together will be an undue burden and should not insist upon restriction (see MPEP § 803).

4. *Conclusion*

For the reasons state above, namely that the inventions as grouped by the Examiner are not distinct and even if they are distinct, examination of all pending claims together will not unduly burden the Examiner, applicants request that the restriction requirements be withdrawn.

Respectfully submitted,

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